

CLAIMS

1. (Previously Presented) A method performed by a scanner, comprising:
 - scanning a document to determine a plurality of actual gray level values for a plurality of pixels scanned from the document;
 - scanning a continuous longitudinal calibration pattern while scanning the document to determine a correctional gray level value associated with the calibration pattern;
 - determining a compensational gray level value with respect to the actual gray level value for each of the pixels, wherein the compensational gray level value is based at least in part on the correctional gray level value and the actual gray level values for each of the pixels scanned from the document; and
 - compensating for image brightness in a scanned image of the document using the compensational gray level value for each of the pixels.
2. (Previously Presented) The method according to claim 1, wherein the scanner comprises:
 - a top;
 - a scanning chassis configured to be movable under the top along a scanning path; and
 - a scanning platform disposed at the top, wherein the scanning platform is configured to support the document above the scanning chassis,

wherein the calibration pattern is positioned along a lateral side of the scanning platform and extends continuously along substantially an entire length of the scanning path.
3. (Previously Presented) The method according to claim 1, further comprising:
 - scanning a second continuous longitudinal calibration pattern while scanning the document to determine a second correctional gray level associated with the calibration pattern, wherein the first correctional gray level is for black, wherein the second correctional gray level is for white, and wherein determining the compensational gray level value for each of the pixels comprises:

calculating [(each of the actual gray level values with respect to each of the pixels - the correctional gray level value for black) ÷ (the correctional gray level value for white - the correctional gray level value for black) * (a theoretical gray level value for white - a theoretical gray level value for black)].

4. (Previously Presented) A method performed by a scanner, comprising:
scanning a document and a continuous longitudinal white pattern, at the same time;
determining a plurality of actual gray level values for a plurality of pixels scanned from the document;

determining a correctional gray level value for white based at least in part on the longitudinal white pattern;

determining a compensational gray level value with respect to the actual gray level values for each of the pixels based at least in part on the correctional gray level value for white, a theoretical gray level value for white, and the actual gray level values for each of the pixels; and

compensating a scanned image of the document using the compensational gray level value for each of the pixels.

5. (Previously Presented) The method according to claim 4, wherein the scanner comprises:

a top;
a scanning chassis configured to be movable under the top along a scanning path; and
a scanning platform disposed at the top, wherein the scanning platform is configured to support the document above the scanning chassis,

wherein the longitudinal white pattern is positioned on the top along a lateral side of the scanning platform and extends continuously along substantially an entire length of the scanning path.

6. (Previously Presented) The method according to claim 5, wherein determining the compensational gray level value for each of the pixels comprises:

calculating [each of the actual gray level values with respect to each of the pixels * (the theoretical gray level value for white ÷ the correctional gray level value for white)].

7. (Previously Presented) A method performed by a scanner, comprising:
scanning a document and a continuous longitudinal black pattern at the same time;
determining a plurality of actual gray level values for a plurality of pixels from the
document;
determining a correctional gray level value for black based at least in part on the
longitudinal black pattern;
determining a compensational gray level value with respect to the actual gray level values
for each of the pixels based at least in part on the correctional gray level value for black, a
theoretical gray level value for black, and the actual gray level values for each of the pixels; and
compensating a scanned image of the document using the compensational gray level
value for each of the pixels.

8. (Previously Presented) The method according to claim 7, wherein the scanner
comprises:

a top;

a scanning chassis configured to be movable under the top along a document scanning
path; and

a scanning platform disposed in the top, wherein the scanning platform is configured to
support the document above the scanning chassis,

wherein the longitudinal black pattern is positioned on the top along a lateral side of the
scanning platform and extends continuously along substantially an entire length of the document
scanning path.

9. (Previously Presented) The method according to claim 7, wherein determining the
compensational gray level value for each of the pixels comprises:

calculating [each of the actual gray level values with respect to each of the pixels - (the
correctional gray level value for black - the theoretical gray level value for black)].

10. (Previously Presented) An apparatus comprising:

a scanning element configured to be moveable in a document scanning direction;

a scanning platform configured to support a document;
a reference pattern disposed adjacent to the scanning platform, wherein the reference pattern is at least as long as the scanning platform in the document scanning direction; and
a processor configured to:
determine actual gray level values for pixels of a scanned image of the document;
determine a correctional gray level value based at least in part on a scanned image of the reference pattern;
determine a compensational gray level value for the pixels of the scanned image based at least in part on the actual gray level and the correctional gray level; and
compensate the scanned image using the compensational gray level value.

11. (Cancelled)

12. (Previously Presented) The apparatus of claim 10, wherein the reference pattern comprises a continuous black pattern elongated in a direction parallel with the document scanning direction and a continuous white pattern elongated in a direction parallel with the document scanning direction and positioned adjacent to the continuous black pattern, and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern and determine a white correctional gray level value from the continuous white pattern.

13. (Previously Presented) The apparatus of claim 12, wherein the processor is further configured to determine the compensational gray level value based at least in part on the black correctional gray level value, the white correctional gray level value, a theoretical gray level value for black, a theoretical gray level value for white, and the actual gray level values.

14. (Previously Presented) The apparatus of claim 10, wherein the reference pattern comprises a continuous black pattern, and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern.

15. (Previously Presented) The apparatus of claim 10, wherein the scanning element is configured to scan both the reference pattern and the document at the same time.

16. (Previously Presented) The apparatus of claim 10, wherein the reference pattern comprises a continuous white pattern, and wherein the processor is further configured to determine a white correctional gray level value from the continuous white pattern.

17. (Previously Presented) The apparatus of claim 16, wherein the processor is further configured to determine the compensational gray level value based at least in part on the white correctional gray level value, a theoretical gray level value for white, and the actual gray level values.

18. (Previously Presented) The apparatus of claim 10, wherein a length of the reference pattern is parallel to the scanning direction and equal to or greater than a length of the scanning platform.

19. (Previously Presented) An apparatus comprising:
means for scanning a document and a calibration pattern at the same time along a scanning path, wherein the means for scanning comprises one or more scan lines;
means for obtaining actual grey level values from the scanned document and obtaining a correctional grey level value from the scanned calibration pattern, wherein the actual gray level value and the correctional gray level value are obtained along the one or more scan lines;
means for determining a compensational gray level value based on the actual gray level value and the correctional gray level value; and
means for compensating a gray level of the scanned document using the compensational gray level value.

20. (Previously Presented) The apparatus of claim 19, wherein the means for scanning is further configured to continuously scan both the calibration pattern and the document while moving longitudinally along the scanning path.

21. (Previously Presented) The apparatus of claim 20, wherein the calibration pattern comprises a black pattern and a white pattern that are each elongated in a direction parallel with the scanning path and wherein the means for compensating is further configured to determine a black correctional gray level value from the black pattern and a white correctional gray level value from the white pattern.

22. (Previously Presented) The apparatus of claim 20, wherein the calibration pattern comprises a black pattern, and wherein the means for compensating is further configured to determine a black correctional gray level value from the black pattern.

23. (Previously Presented) The apparatus of claim 20, wherein the calibration pattern comprises a white pattern, and wherein the means for compensating is further configured to determine a white correctional gray level value from the white pattern.

24. (Previously Presented) The apparatus of claim 19, wherein a length of the calibration pattern is equal to or greater than a length of the scanning path.

25-30. (Cancelled)

31. (Previously Presented) The method of claim 4, wherein the correctional gray level value for white is determined at the same time as at least one of the plurality of actual gray level values